

CLAIMS

1. A head controller for controlling pressure
creating means for contracting and expanding a volume of a
5 pressurizing compartment communicating with a nozzle of a
droplet discharging head, comprising:

drive waveform generating means for outputting a
drive pulse that includes at least a first waveform element
for expanding the volume of said pressurizing compartment, a
10 second waveform element for maintaining an expanded state of
the volume of said pressurizing compartment caused by the
first waveform element, and a third waveform element for
contracting the volume of said pressurizing compartment in the
expanded state so that droplets are discharged from said
15 pressurizing compartment; and

means for decreasing a difference between first and
second potential differences when environmental temperature is
higher than a first predetermined temperature and increasing
the difference between the first and second potential
20 differences when the environmental temperature is lower than a
second predetermined temperature, the first potential
difference being a potential difference between the first
waveform element at the beginning of expansion of the volume
of said pressurizing compartment and the second waveform
25 element, and the second potential difference being a potential

difference between the third waveform element at the end of contraction of the volume of said pressurizing compartment and the second waveform element.

5 2. The head controller as claimed in claim 1,
wherein the drive waveform generating means generates and
outputs a drive waveform having the first potential difference
greater than the second potential difference and varies a
potential of the first waveform element according to
10 environmental temperature.

 3. The head controller as claimed in claim 1,
wherein the drive waveform generating means generates and
outputs a drive waveform having the second potential
15 difference greater than the first potential difference and
varies a potential of the third waveform element according to
environmental temperature.

 4. An inkjet recording apparatus, comprising:
20 a droplet discharging head for discharging ink drops
and having a pressurizing compartment;

 drive waveform generating means for outputting a
drive pulse that includes at least a first waveform element
for expanding a volume of said pressurizing compartment of the
25 droplet discharging head, a second waveform element for

maintaining an expanded state of the volume of said
pressurizing compartment caused by the first waveform element,
and a third waveform element for contracting the volume of
said pressurizing compartment in the expanded state so that
5 ink drops are discharged from said pressurizing compartment;

temperature detecting means for detecting
environmental temperature; and

means for decreasing a difference between first and
second potential differences when the environmental
10 temperature is higher than a first predetermined temperature
and increasing the difference between the first and second
potential differences when the environmental temperature is
lower than a second predetermined temperature, the first
potential difference being a potential difference between the
15 first waveform element at the beginning of expansion of the
volume of said pressurizing compartment and the second
waveform element, and the second potential difference being a
potential difference between the third waveform element at the
end of contraction of the volume of said pressurizing
20 compartment and the second waveform element.

5. The inkjet recording apparatus as claimed in
claim 4, wherein a drive waveform having the first potential
difference greater than the second potential difference is
25 generated and output, and a potential of the first waveform

element is varied according to the environmental temperature.

6. The inkjet recording apparatus as claimed in claim 4, wherein a drive waveform having the second potential difference greater than the first potential difference is generated and output, and a potential of the third waveform element is varied according to the environmental temperature.

7. An image recording apparatus, comprising:

10 a droplet discharging head for discharging droplets and having a pressurizing compartment;

drive waveform generating means for outputting a drive pulse that includes at least a first waveform element for expanding a volume of said pressurizing compartment of the droplet discharging head, a second waveform element for maintaining an expanded state of the volume of said pressurizing compartment caused by the first waveform element, and a third waveform element for contracting the volume of said pressurizing compartment in the expanded state so that droplets are discharged from said pressurizing compartment;

temperature detecting means for detecting environmental temperature; and

means for decreasing a difference between first and second potential differences when the environmental temperature is higher than a first predetermined temperature

and increasing the difference between the first and second potential differences when the environmental temperature is lower than a second predetermined temperature, the first potential difference being a potential difference between the first waveform element at the beginning of expansion of the volume of said pressurizing compartment and the second waveform element, and the second potential difference being a potential difference between the third waveform element at the end of contraction of the volume of said pressurizing compartment and the second waveform element.

8. The image recording apparatus as claimed in claim 7, wherein a drive waveform having the first potential difference greater than the second potential difference is generated and output, and a potential of the first waveform element is varied according to the environmental temperature.

9. The image recording apparatus as claimed in claim 7, wherein a drive waveform having the second potential difference greater than the first potential difference is generated and output, and a potential of the third waveform element is varied according to the environmental temperature.